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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/726,336

12/01/2003

David J. Zahniser

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EXAMINER

STOCK JR, GORDON J

ART UNIT

PAPER NUMBER

2877

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

02/28/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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Office Action Summary	Application No. 10/726,336	Applicant(s) ZAHNISER ET AL.	
	Examiner Gordon J. Stock	Art Unit 2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-26, 28-32 and 37-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-25, 28-32, 37, 39 and 43 is/are rejected.
- 7) ☒ Claim(s) 26, 38 and 40-42 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The Amendment received on December 6, 2006 has been entered into the record.

Claim Objections

2. **Claim 40** is objected to for the following: on line 3 'more greed' should read –more green-. Correction is required.
3. **Claim 43** is objected to for the following: on line 2 'closing spaced' should read –closely spaced-. Correction is required.

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
5. **Claims 16-25, 28, 37, and 43** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Miller et al. (6,373,568)—previously cited**.

As for **claim 16**, Miller in a spectral imaging system discloses the following: a light source comprising an array of closely spaced LEDS, including a first LED having a first narrow band wavelength and a second LED having a second narrow band wavelength different from the first narrow band wavelength that are located side by side (Fig. 4a: 1; Fig. 2: 10a-10j; col. 4, lines 55-65; col. 5, lines 40-52); separately controllable (Fig. 3: 42 and 43); at least one lens disposed between light source and sample (Fig. 4a: 166 or 163); wherein the light source illuminates the sample using light emitted from one or both of the first and second LEDs without dichroic mixing and without the light passing through a bandwidth filter (col. 4, lines 55-65; Fig. 2: 31-33). Miller does not explicitly state a slide, but he mentions a microscope assembly with biological sample (Fig. 4a: 67; col. 5, lines 1-5; col. 9, lines 15-35). Examiner takes Official

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Notice that slides are well-known supports for biological samples in microscopy. Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to have a slide to provide support for the biological sample being investigated.

As for **claims 17, 18, 21, 22**, Miller discloses everything as above (see **claim 16**). In addition, he discloses a red LED, green LED, and another LED of a different wavelength (col. 5, lines 45-55; col. 6, lines 30-35; Fig. 2: 10a-10j).

As for **claims 19, 20, 25**, Miller discloses everything as above (see **claim 16**). In addition, he discloses an array of at least 2 green LEDs, second narrow band wavelength, and an array of at least 2 red LEDs, first narrow band wavelength, from having a central wavelength spaced 25 nm apart with a bandwidth overlapping between at least two neighboring LEDs from having a bandwidth of about 35nm (col. 5, lines 42-50). In addition, at least two of each wavelength may be used to increase brightness (col. 7, lines 50-61).

As for **claims 23-24**, Miller discloses everything as above (see **claim 16**). In addition, he discloses a first wavelength between about 690 and about 750 nm (col. 6, line 32; col. 14, lines 35-40); and a second wavelength between about 500 and 600 nm (col. 5, lines 42-50; col. 6, line 15 and line 32).

As for **claim 28**, Miller discloses everything as above (see **claim 25**). In addition, he discloses the first and second LED arrays are formed on a single substrate (Fig. 2: 10a-10j constituting 10 dies on one substrate).

As for **claim 37**, Miller discloses the following: a first array of two LEDs having a first narrowband wavelength; a second array of two LEDs having a second narrowband wavelength different from the first narrowband wavelength; a third array of two LEDs having a third narrow

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band wavelength different from the first and second narrowband wavelength from having a central wavelength spaced 25 nm apart with a bandwidth overlapping between at least two neighboring LEDs from having a bandwidth of about 35nm (col. 5, lines 42-50); formed on a single substrate (Fig. 2: 10a-10j constituting 10 dies on one substrate); at least one lens disposed between the sample and the respective first, second, and third LED arrays (Fig. 4a: 166 and 163). In addition, at least two of each wavelength may be used to increase brightness in the grating system of Fig. 2 (col. 7, lines 50-61). And the light source illuminates the sample using light emitted from one or more of the first, second and third LED arrays without dichroic mixing and without the light passing through a bandwidth filter (col. 4, lines 55-65; Fig. 2: 31-33). Miller does not explicitly state a slide, but he mentions a microscope assembly with biological sample (Fig. 4a: 67; col. 5, lines 1-5; col. 9, lines 15-35). Examiner takes Official Notice that slides are well-known supports for biological samples in microscopy. Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to have a slide to provide support for the biological sample being investigated.

As for **claim 43**, Miller discloses an illumination source (Fig. 2: 1) comprising an LED module comprising an array of closely spaced LEDs (Fig. 2: 10a-10j); including a first LED having a first narrow band wavelength and a second LED having a second narrow band wavelength different from the first narrow band wavelength that are located side by side (Fig. 4a: 1: Fig. 2: 10a-10j; col. 4, lines 55-65; col. 5, lines 40-52); separately controllable (Fig. 3: 42 and 43). Miller suggests that the LEDs may be about 12.7 mm from each other (col. 6, lines 28-30). He is silent concerning a diameter of 4mm. It would have been an obvious matter of design choice to have the LED module have two LEDs fall within a 4 mm diameter since such a

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modification would have involved a mere change in the size of a component, the LED module. A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955).

6. **Claims 29-32** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Morgan et al. (2003/0076281)**.

As for **claim 29**, Morgan in a diffuse illumination system discloses the following: an optical instrument lighting system, a surgical microscope (paragraph 0355) comprising a first narrow band wavelength LED consisting of a first die, a second narrow band wavelength LED consisting of a second die, the first narrowband wavelength different from the second narrowband wavelength (paragraphs 0109 with paragraph 0020); a plurality of lenses including a first lens positioned over the first die and a second lens positioned over the second die (Fig. 7: 1005); wherein the lighting system illuminates the sample using light emitted from one or both of the first and second LEDs (paragraph 0356 demonstrates all LEDs are used in illumination since the LED system illuminates the material) without the light passing through a bandwidth filter (only signal filtering is mentioned: paragraph 0143 and teaches away from optical filtering: paragraph 0017). As for a substrate wherein the first and second dies are attached, Morgan does not explicitly state this. However, Examiner takes Official Notice that substrates are well known in the art for providing a support for dies. In addition, Morgan suggests that a substrate exists (Fig. 107: 1001 dies are attached to a plane). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to provide a substrate in order to have the LED dies attached to provide support and stability to the LED system.

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As for **claims 30-32**, Morgan discloses everything as above (see **claim 29**). In addition, he discloses a plurality of green LEDs, plurality of red LEDs, at least one red LED and at least one green LED (paragraph 0109).

7. **Claim 39** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Miller et al. (6,373,568)**—**previously cited** in view of **Wunderman et al. (6,122,042)**—**previously cited**.

As for **claim 39**, Miller discloses everything as above (see **claim 16**). He does not explicitly state a microchip module, but suggests one (Fig. 2: 10a-10j). However, Wunderman in a photometric device discloses a microchip module for an LED array (Fig. 6a). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to have the light source comprise an LED microchip module to have a more compact illumination system.

8. **Claim 43** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Wunderman et al. (6,122,042)**—**previously cited**.

As for **claim 43**, Wunderman discloses an illumination source, an LED array (Fig. 1a: 30) comprising an LED module comprising an array of closely spaced LEDs including a first LED having a first narrow band wavelength and a second LED having a second narrow band wavelength different from the first narrow band wavelength, the first and second LEDs being separately controllable arranged side-by-side (Fig. 1a: 38; Fig. 2b: 30, 46; col. 9, lines 10-20; col. 7, lines 10-15; col. 11, lines 49-55). As for being within a 4 mm diameter, Wunderman does not explicitly state this. However, he discloses the LEDs are substantially cubic (Fig. 2E; 46) are closely spaced to each other (Fig. 2b: 46) and that each LED die has a volume of .03 cubic mm (col. 6, line 33). Therefore, it would be obvious to one of ordinary skill in the art at the time the

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invention was made that two LEDs fell within a 4mm diameter for each die is approximately .3 mm wide (Fig. 2b: 2 LEDs are approximately .6 mm wide).

Allowable Subject Matter

9. **Claims 26, 38, 40-42** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As to **claim 26**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in an optical instrument lighting system the first array of LEDs are formed on a first substrate and the second array of LEDs are formed on a second substrate, in combination with the rest of the limitations of **claim 26**.

As to **claim 38**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in an optical instrument lighting system the LED array is positioned in a general position of a lamp filament of a Koehler illuminator and the at least one lens comprises a Koehler illuminator, in combination with the rest of the limitations of **claim 38**.

As to **claim 40**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in an optical instrument lighting system a plurality of lenses including a first lens positioned over at least one red LED and a second lens positioned over at least one green LED, in combination with the rest of the limitations of **claims 40-41**.

As to **claim 42**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in an optical instrument lighting system the first and second lenses are attached to the potting material, in combination with the rest of the limitations of **claim 42**.

Response to Arguments

10. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection (since rejections with Miller ('466) use primarily the Fig. 2 embodiment; whereas, the previous rejections using Miller ('466) focused on the Fig. 1 embodiment). Nevertheless, Examiner will address Remarks filed on December 6, 2006. In regards to the previous rejections using Douglas-Hamilton et al. (6,445,451), Examiner finds the remarks (pages 7-8) persuasive. Subsequently, the previous rejections under 35 U.S.C. 102(e) have been withdrawn. In regards to the Remarks of pages 8-11 with Miller, Examiner agrees that the Fig. 1 embodiment teaches away from unfiltered LED lighting. In addition, Examiner finds the arguments persuasive for **claims 29-32**. Subsequently, the previous rejection under 35 U.S.C. 103(a) for **claims 29-32** has been withdrawn. However, a new grounds of rejection in view of Morgan et al. (2003/0076281) has been made. As for the argument concerning the Fig. 2 embodiment using a grating that is specifically excluded from the scope of amended independent **claims 16 and 37**, Examiner disagrees. 'Without dichroic mixing' and 'without light passing through a bandwidth filter' does not preclude the use of a grating. In addition, in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., without using a grating) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

As for the arguments on page 11 of Remarks in regards to **claim 38**, the Examiner has found the arguments persuasive. Subsequently, the previous rejection of **claim 38** under 35

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U.S.C. 103(a) has been withdrawn. As for **claims 39-40**, see arguments for **claim 16** above for **claim 39**. Examiner has withdrawn the previous rejection of **claim 40** under 35 U.S.C. 103(a). See reasons for allowability for **claim 40** above. As for the arguments on page 11 of Remarks in regards to **claim 43** that none of the prior art of record teaches LEDs arranged side-by-side such the two LEDs fall within a 4 mm diameter, Examiner disagrees. Please see rejections of **claim 43** under 35 U.S.C. 103(a) above (with Miller et al. '568 and Wunderman et al. '042)

Conclusion

11. Several facts have been relied upon from the personal knowledge of the examiner about which the examiner took Official Notice. Applicant must seasonably challenge well known statements and statements based on personal knowledge when they are made by the Board of Patent Appeals and Interferences. In re Selmi, 156 F.2d 96, 70 USPQ 197 (CCPA 1946); In re Fischer, 125 F.2d 725, 52 USPQ 473 (CCPA 1942). See also In re Boon, 439 F.2d 724, 169 USPQ 231 (CCPA 1971) (a challenge to the taking of judicial notice must contain adequate information or argument to create on its face a reasonable doubt regarding the circumstances justifying the judicial notice). If applicant does not seasonably traverse the well-known statement during examination, then the object of the well known statement is taken to be admitted prior art. In re Chevenard, 139 F.2d 71, 60 USPQ 239 (CCPA 1943). A seasonable challenge constitutes a demand for evidence made as soon as practicable during prosecution. Thus, applicant is charged with rebutting the well-known statement in the next reply after the Office action in which the well known statement was made.

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12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Fax/Telephone Numbers

If the applicant wishes to send a fax dealing with either a proposed amendment or a discussion with a phone interview, then the fax should:

1) Contain either a statement "DRAFT" or "PROPOSED AMENDMENT" on the fax cover sheet; and

2) Should be unsigned by the attorney or agent.

This will ensure that it will not be entered into the case and will be forwarded to the examiner as quickly as possible.

Papers related to the application may be submitted to Group 2800 by Fax transmission. Papers should be faxed to Group 2800 via the PTO Fax machine located in Crystal Plaza 4. The form of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CP4 Fax Machine number is: (571) 273-8300

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gordon J. Stock whose telephone number is (571) 272-2431.

The examiner can normally be reached on Monday-Friday, 10:00 a.m. - 6:30 p.m.

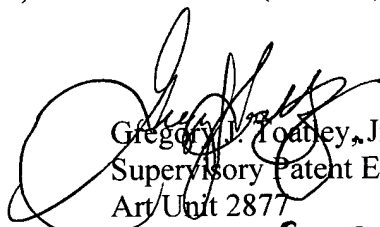
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr., can be reached at 571-272-2800 ext 77.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private Pair system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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February 19, 2007



Gregory J. Toatley, Jr.
Supervisory Patent Examiner
Art Unit 2877
20 Feb 07